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10/723,110

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Richard Paul Messmer

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EXAMINER

PROCTOR, JASON SCOTT

ART UNIT

PAPER NUMBER

2123

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/723,110	Applicant(s) MESSMER ET AL.	
	Examiner JASON PROCTOR	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/17/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-28 were rejected in the Office Action entered on 1 February 2008.

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4 June 2008 has been entered.

The 4 June 2008 submission has canceled claims 1-28 and presented new claims 29-33. Claims 29-33 are pending in this application.

Claims 29-33 are rejected.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 17 April 2008 was filed after the mailing date of the Final Rejection on 1 February 2008. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

3. A reference cited on this IDS refers to a "COMPACT DISK". Compact disk submissions must be made according to 37 CFR 1.52. Applicants' submission did not include a second copy of the compact disk as required, does not contain appropriate subject matter for a compact disk submission, was submitted with improper packaging, and was improperly labeled. This reference has not been considered by the Examiner and has been lined through on the IDS.

The Examiner cannot consider executable software code. The Examiner suggests that Applicants submit publications that *describe* the executable software. This may include press releases, product documentation, software source code, and the like. Additionally, the requirements of 37 CFR 1.56 do not necessarily extend to software products that were developed and published several years after the date of Applicants' invention.

Response to Arguments – 35 USC § 103

4. In response to the previous rejections under 35 U.S.C. § 103, Applicants argue primarily that:

In particular, Applicants respectfully submit that at a minimum, the cited art fails to show, teach, or suggest, "automatically associating entity, task, and resource input data from a business database system with the model template, and automatically performing allocations of the resource input data to the task parameters." Further at a minimum, Applicants respectfully submit that the cited art fails to show, teach, or suggest, "a model template defined by a plurality of tables, where each table is defined by one or more of entity parameters, task parameters, and resource parameters and where each table includes a mapping to one or more other tables of the plurality of tables."

The Examiner respectfully traverses this argument as follows.

Regarding the “automatically associating” limitation, the Examiner submits that in light of the specification, this limitation appears to describe, having retrieved model templates from a database, *configuring* or *specializing* those model templates to reflect the specific needs of a particular simulation. That is, “associating” the various data from a business database system with the model template appears to convert the model template into a specialized model suitable for simulating the particular system described by the business data. As shown below, Son teaches this limitation.

Regarding the “automatically performing allocations” limitation, the specification appears to support this language in paragraph 0068 as locating available resources for various

tasks, i.e. scheduling resources in the simulation. Son teaches these limitations in sections 5.2 Job Flow Through the Shop and 5.3 Job Arrival Information, as shown below.

Regarding “a model template defined by a plurality of tables” as claimed, this language appears to describe a relational database. Indeed Applicants’ specification describes this feature as a relational database at paragraph 0061, specifically using the phrase “relational database”. Relational databases are old and well known in the art, as shown by the “How Stuff Works – What are relational databases?” internet article, describing the origin of relational databases as far back as 1970. Further, that article describes that the commercial "Access" database is a relational database. Son teaches the use of the commercial "Access" database as shown below.

Applicants’ arguments have been fully considered but have been found unpersuasive.

Claim Objections

Claims 31-33 are objected to because of the following informalities:

5. In claim 31, the phrase “the output data **filed**” in the second to last line appears to be a typographical error and should read “the output data **file**”.
6. In claim 32, the phrase “and the resource parameters as **the** relate to an objective function” in lines 12-13 appears to be a typographical error and should read “and the resource parameters as **they** relate to an objective function”.
7. In claim 33, the phrase “and the resource parameters as **the** relate to an objective function” in lines 14-15 appears to be a typographical error and should read “and the resource parameters as **they** relate to an objective function”.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claim 33 is rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

Claim 33 defines “a storage medium encoded with machine-readable program code”. Interpreting this claim language in light of the specification, in particular paragraph 0150 of the specification, this language encompasses transmission media and is therefore non-statutory subject matter. More specifically, this paragraph describes that “the memory in the processing machine, utilized to hold the set of instructions” may be a variety of “physical forms or transmission”, including a “communications channel, a satellite transmissions or other remote transmissions, as well as any other medium or source of data that may be read by the processors of the invention.” For more information, please see MPEP 2106.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. § 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. § 102(e), (f) or (g) prior art under 35 U.S.C. § 103(a).

9. Claims 29-33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over “Automatic Generation of Simulation Models from Neutral Libraries: An Example” by Son et al. (“Son”) in view of US Patent No. 7,103,562 to Kosiba et al. (“Kosiba”).

Regarding claim 29, Son teaches:

A system to simulate a process of discrete events or tasks having a plurality of available resources associated therewith [“*The role of the model builder is to create a discrete-event simulation model from the neutral description of the system and the actual data in the database.*” (page 1562, “5 Design of the Model Builder”)], the system comprising:

A model template defined by a plurality of tables where each table is defined by one or more entity parameters, task parameters, and resource parameters and where each table includes a mapping to one or more other tables of the plurality of tables (Figures 3-4);

A database that stores the model template and the plurality of tables [*“From the schema in the previous section, we generated a collection of database tables in MS Access 97 (see Figure 3). The tables in the figure belong to two classes. The first class contains a table for each entity in the EXPRESS schema. The second class contains tables that specify the relationship among the entities.”* (page 1562, “4.2 Database Instantiation”)];

A model application in communication with the database and which receives commands from a user, and, in response to the commands, builds a simulation model by retrieving the model template and the plurality of tables [*“The first step in creating the simulation model is the construction of the shop floor. The model builder creates this shop floor from the ‘stations’ table in the database (see Figure 4-a). Each station in that table is associated with the ‘location’ template in Promodel (see Figure 5-a). The data for first two columns in this template come directly from the stations table.”* (page 1564, “5.1 Shop Floor”); etc.]

by automatically associating entity, task, and resource input data from a business database system with the model template, and by automatically performing allocations of the resource input data to the task parameters [*“To control the flow of jobs through the shop during a particular run, Promodel requires explicit values for the routings and processing times. Variables for these values are contained in the process template and the routing template; exact values are contained in the initialization file, (see Figures 5-a, 5-b). The initialization file contains the data for each specific run of the simulation.”* (page 1564, “5.2 Job Flow Through

the Shop”); *“Job arrival data is contained in the arrivals template, which contains variables called Entity, Location, Qty Each, First Time, Occurrences, Frequency, Logic, and Disable.”* (page 1564, “5.3 Job Arrival Information”); etc.]; and

A server that performs a simulation of the process by processing the simulation model, and based on the simulation, generates an output data file containing output data representative thereof [“*After simulation model has been run, the results have been stored in returned_results table (see Figure 6).*” (page 1566, “5.4 Simulation Result Information”)].

Son does not expressly teach an optimizing application in communication with the model application and which receives commands from a user, and, in response to the commands, selects one or more of the entity parameters, the task parameters, and the resource parameters of the simulation model and an objective function, defines bounds of the selected one or more of the entity parameters, the task parameters, and the resource parameters, and generates values for the objective function.

Kosiba teaches a system that can easily produce accurate staff plans, budget plans and behavioral analysis for a business (column 3, lines 5-8) that overcomes the limitations of prior art discrete event simulation systems that are complex to develop, difficult to use and too computationally slow for budget and staff planning (column 2, lines 51-67), wherein a discrete event simulation model is created based on inputs such as available resources and the performance of the resources (column 12, lines 35-65).

Kosiba teaches an optimizing application in communication with the model application and which receives commands from a user, and, in response to the commands, selects one or more of the entity parameters, task parameters, and resource parameters of the simulation model and an objective function, defines bounds of the selected entity parameters, task parameters, and resource parameters, and generates values for the objective function (column 24, line 46-column 25, line 45).

Son and Kosiba are analogous art since they are both directed to the building of a discrete event simulation model for a business process for the purpose of performance analysis.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system to simulate a process of discrete events as taught by Son to include the optimizing application that generates values for an objective function as taught in Kosiba since Kosiba teaches a system that can easily produce accurate staff plans, budget plans and behavioral analysis for a business (Kosiba, column 3, lines 5-8) that overcomes the limitations of prior art discrete event simulation systems that are complex to develop, difficult to use and too computationally slow for budget and staff planning (Kosiba, column 2, lines 51-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of Applicants' invention to combine the teachings of Son and Kosiba to arrive at the invention specified in claim 29.

Regarding claim 30, Son teaches automatically performing allocations is based on processing of an efficiency resource matrix [*"The initialization file contains the data for each specific run of the simulation. The model builder is designed so that the system is data-driven,*

the same model can be run many times by simply changing this file. The initialization file contains process plan data, which is a collection of 3-dimensional arrays (product_id, operation_id, n) where $n = 1, \dots, 5$. The meanings of the 5 values of n are: current location, processing time at this location, next processing station, travel time, next physical location. The actual data values are derived from the stations table and the operations table in the database.” (page 1564, “5.2 Job Flow Through the Shop”).

Regarding claim 31, Son teaches an output template that is stored in the database and wherein the server generates the output data file based on the output template [*“Performance names of interest have been provided in Figure 4-c. $Davg(location_Busy)$ represents the utilization of resource. The model builder understands this predefined name for performance measures. After simulation model has been run, the results have been stored in returned_results table (see Figure 6).”* (page 1566, “5.4 Simulation Results File”).

Claim 32 recites a method performed by the system of claim 29. Son in view of Kosiba disclose a system and similarly disclose the method performed by that system. Claim 32 is obvious over Son in view of Kosiba for the rationale shown above in regard to claim 29.

Claim 33 recites a storage medium encoded with machine-readable program code for performing a method according to claim 32. Son discloses a computer software simulation package (abstract) while Kosiba’s disclosure concerns a “computerized system and method”

(column 1, lines 15-21). Therefore claim 33 is obvious over Son in view of Kosiba for the rationale shown above in regard to claim 29.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jason Proctor/
Examiner
Art Unit 2123

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